Claims

1. Use of the compounds of general formula (I)

$$E\text{-}W_n \qquad (I)$$

in which

E stands for a radical that binds endothelin receptors and is derived from endothelins, endothelin analogs, endothelin derivatives, endothelin partial sequences, and endothelin antagonists, and

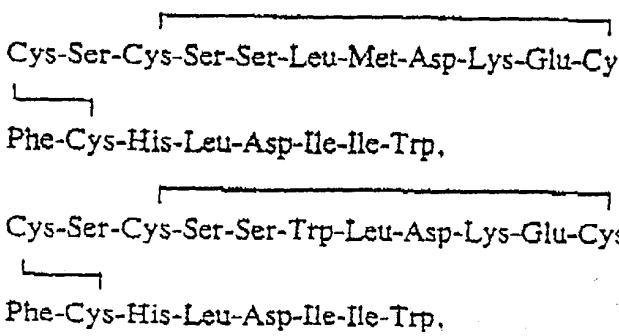
W stands for an active group that is a radionuclide or that is derived from a chemotherapy agent, a complex with a radioactive metal isotope, an antibody, antibody fragment, peptide, carbohydrate, oligonucleotide, PTK blocker, antithrombotic agent, clotting cascade inhibitor, hormone, growth factor inhibitor, pharmaceutical agent, platelet aggregation inhibitor, anti-inflammatory agent, Ca-antagonist, lipid-lowering agent, or an antiproliferative agent, and

n stands for numbers 1 to 100, preferably 1 to 10,

as therapeutic agents.

2. Use of the compounds of general formula $E\text{-}W_n$, in which E, W, and n have the meaning that is indicated in claim 1 as therapeutic agents for treating vascular diseases.

3. Use according to claim 1 or 2, in which the radical that binds the endothelin receptor has the structure



Cys-Thr-Cys-Phe-Thr-Tyr-Lys-Asp-Lys-Glu-Cys-Val-Tyr-
Tyr-Cys-His-Leu-Asp-Ile-Ile-Trp.

Cys-Ser-Cys-Ser-Ser-Trp-Leu-Asp-Lys-Glu-Cys-Val-Tyr-
Phe-Cys-His-Leu-Asp-Ile-Ile-Trp.

Cys-Thr-Cys-Phe-Thr-Tyr-Lys-Asp-Lys-Glu-Cys-Val-Tyr-
Tyr-Cys-His-Leu-Asp-Ile-Ile-Trp.

Cys-Ser-Ala-Ser-Ser-Leu-Met-Asp-Lys-Glu-Ala-Val-Tyr-
Phe-Cys-His-Leu-Asp-Ile-Ile-Trp.

Cys-Ser-Cys-Asn-Ser-Trp-Leu-Asp-Lys-Glu-Cys-Val-Tyr-
Phe-Cys-His-Leu-Asp-Ile-Ile-Trp.

Cys-Ser-Cys-Lys-Asp-Met-Thr-Asp-Lys-Glu-Cys-Leu-Asn-
Phe-Cys-His-Gln-Asp-Val-Ile-Trp.

Ala-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-
Phe-Ala-His-Leu-Asp-Ile-Ile-Trp.

Ala-Ser-Ala-Ser-Ser-Leu-Met-Asp-Lys-Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp.

Cys-Ser-Cys-Ser-Ser-Trp-Leu-Asp-Lys-Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp.

Cys-Val-Tyr-Phe-Cys-His-Leu-Asp-Ile-Ile-Trp.

N-Acetyl-Leu-Met-Asp-Lys-Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp.

His-Leu-Asp-Ile-Ile-Trp.

(DTrp)-Leu-Asp-Ile-Ile-Trp.

Cyclo-(DTrp-DAsp-Pro-DVal-Leu).

Cyclo-(DGlu-Ala-alloDIle-Leu-DTrp).

Cyclo(D-Trp-D-Asp-Pro-α-(2-thienyl)-D-Gly-Leu).

H-Gly-Asn-Trp-His-Gly-Thr-Ala-Pro-Asp-Trp-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp-OH,

Cys-Thr-Cys-Asn-Asp-Met-Tyr-Ala-Glu-Glu-Cys-Leu-Asn-

Phe-Cys-His-Glu-Asp-Val-Ile-Trp,

Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp,

Ac-Leu-Met-Asp-Lys-Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp,

Suc-Asp-Glu-Glu-Ala-Val-Thr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp,

Cys-Val-Tyr-Phe-Cys-His-Asp-Leu-Ile-Ile-Trp,

Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-

Phe-Cys-His-Leu-Asp-Ile-Ile-Trp,

Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-

Phe-Cys-His-Leu-Thr-γ-methyl-Leu-Ile-Trp

or is

a 4-t-butyl-N-[6-(2-hydroxy-ethoxy)-5-(3-methoxy-phenoxy)-4-pyrimidinyl-benzenesulfonamide radical,

a 4-t-butyl-N-[6-(1',2'-dihydroxy-propyloxy)-5'-(2-methoxy-phenoxy)-2-methoxy-4-pyrimidinyl-benzenesulfonamide radical,

a 4-t-butyl-N-[6'-(2'-hydroxy-ethoxy)-5-(2-methoxy-phenoxy)-2,2'-bipyrimidin-4-yl-benzenylsulfonamide radical,

a 27-O-caffeoylmyricerone radical, or

a 2(R)-[2-(R)-[2(S)-[[1-(hexahydro-1H-azepinyl)]-carbonyl]amino-4-methylpentanoyl]amino-3-[1-methyl-1H-indonyl)]propinonyl]amino-3-(2-pyridyl)propionic acid radical.

4. Use according to claim 1 or 2, in which the radical that binds the endothelin receptor has the structure

Leu-Asp-Ile-Ile-Trp,

Ac-His-Leu-Asp-Ile-Ile-Trp,

Ac-D-His-Leu-Asp-Ile-Ile-Trp,

Ile-Ile-Trp,

Asp-Gly-Gly-Cys-Gly-Cys-(D-Trp)-Leu-Asp-Ile-Ile-Trp,

Ac-D-Bhg-Leu-Asp-Ile-Ile-Trp, in which Bhg stands for a 10,11-dihydro-5 H-dibenzo-[a,d]-cycloheptaneglycine radical,

Ac-D-Bip-Leu-Asp-Ile-Ile-Trp, in which Bip stands for a 4,4'-biphenylalanine radical, or the structure

Asp-Gly-Gly-Cys-Gly-Cys-Phe-(D-Trp)-Leu-Asp-Ile-Ile-Trp.

5. Use according to one of claims 1 to 4, in which the active group contains an alpha-, beta- and/or gamma-radiator, positron radiator, Auger electron radiator, x-ray radiator and/or a fluorescence radiator.

6. Use according to claim 5, in which the active group contains a radionuclide of the elements Ag, As, At, Au, Ba, Bi,

Br, C, Co, Cr, Cu, F, Fe, Ga, Gd, Hg, Ho, I, In, Ir, Lu, Mn, N, O, P, Pb, Pd, Pm, Re, Rh, Ru, Sb, Sc, Se, Sm, Sn, Tb, Tc or Y.

7. Use according to claim 5, in which the active groups are derived from a metal complex of a radionuclide of the elements Ag, As, Au, Bi, Cu, Ga, Gd, Hg, Ho, In, Ir, Lu, Pb, Pd, Pm, Pr, Re, Rh, Ru, Sb, Sc, Se, Sm, Sn, Tb, Tc or Y.

8. Use according to one of claims 5 to 7, in which the radionuclide is ^{188}Re, ^{90}Y or ^{111}In.

9. Compounds of general formula (II)

$$E\text{-}W^1_n \qquad (II)$$

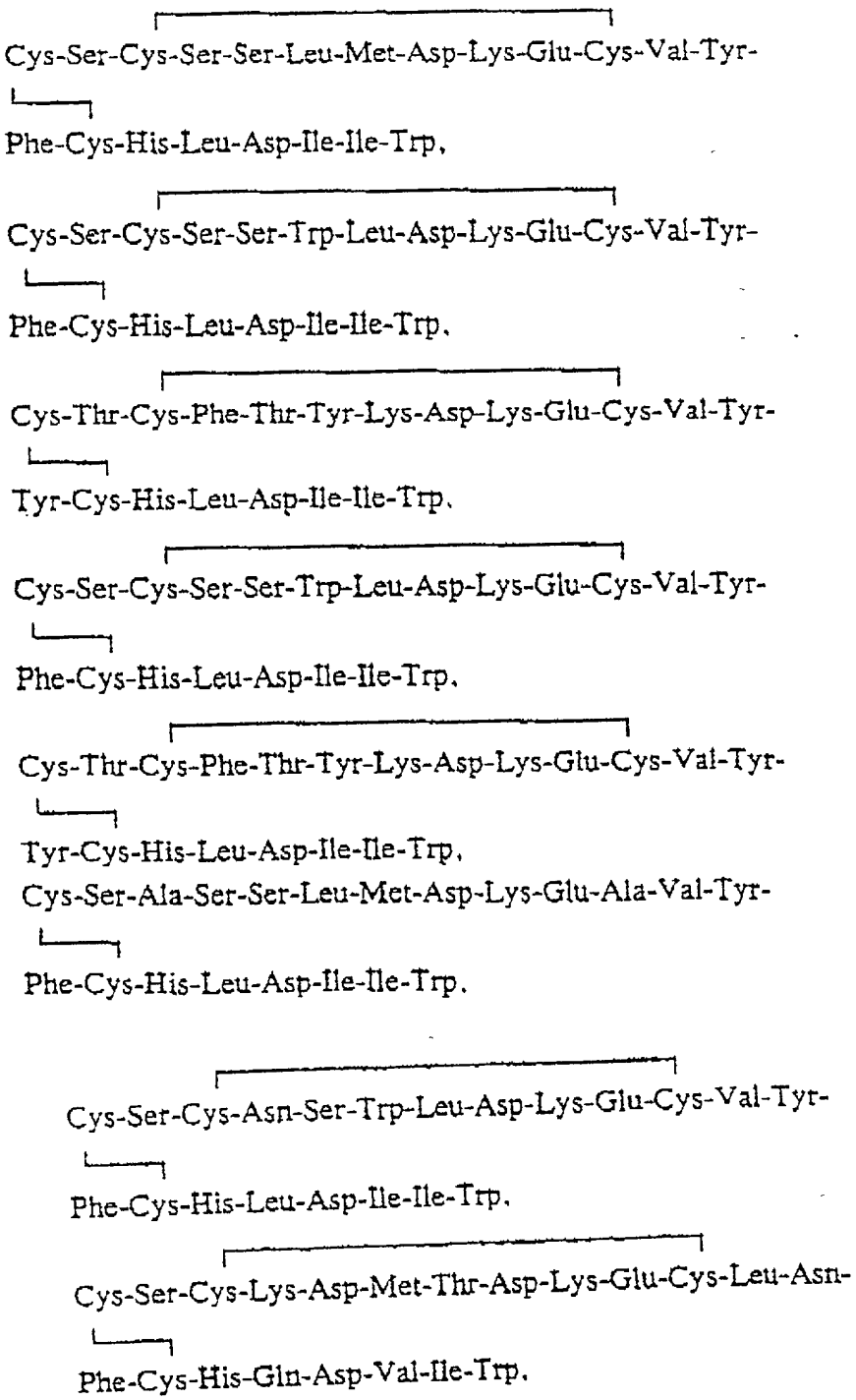
in which

E stands for a radical that binds endothelin receptors and is derived from endothelins, endothelin analogs, endothelin derivatives, endothelin partial sequences, and endothelin antagonists, and

W^1 stands for an active group that contains a radionuclide of the elements At, Ba, Br, C, F, N, O or P or that is derived from a chemotherapy agent, an antibody, antibody fragment, peptide, carbohydrate, oligonucleotide, PTK blocker, antithrombotic agent, growth factor inhibitor, pharmaceutical agent, hormone, platelet aggregation inhibitor, anti-inflammatory agent, Ca-antagonist, lipid-lowering agent, or an antiproliferative agent, and

n stands for numbers 1 to 100, preferably 1 to 10.

10. Compounds according to claim 9, in which the radical that binds the endothelin receptor has the structure


Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-
Phe-Cys-His-Leu-Asp-Ile-Ile-Trp,
Cys-Ser-Cys-Ser-Ser-Trp-Leu-Asp-Lys-Glu-Cys-Val-Tyr-
Phe-Cys-His-Leu-Asp-Ile-Ile-Trp,
Cys-Thr-Cys-Phe-Thr-Tyr-Lys-Asp-Lys-Glu-Cys-Val-Tyr-
Tyr-Cys-His-Leu-Asp-Ile-Ile-Trp,
Cys-Ser-Cys-Ser-Ser-Trp-Leu-Asp-Lys-Glu-Cys-Val-Tyr-
Phe-Cys-His-Leu-Asp-Ile-Ile-Trp,
Cys-Thr-Cys-Phe-Thr-Tyr-Lys-Asp-Lys-Glu-Cys-Val-Tyr-
Tyr-Cys-His-Leu-Asp-Ile-Ile-Trp,
Cys-Ser-Ala-Ser-Ser-Leu-Met-Asp-Lys-Glu-Ala-Val-Tyr-
Phe-Cys-His-Leu-Asp-Ile-Ile-Trp,
Cys-Ser-Cys-Asn-Ser-Trp-Leu-Asp-Lys-Glu-Cys-Val-Tyr-
Phe-Cys-His-Leu-Asp-Ile-Ile-Trp,
Cys-Ser-Cys-Lys-Asp-Met-Thr-Asp-Lys-Glu-Cys-Leu-Asn-
Phe-Cys-His-Gln-Asp-Val-Ile-Trp,

Ala-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-
Phe-Ala-His-Leu-Asp-Ile-Ile-Trp,
Ala-Ser-Ala-Ser-Ser-Leu-Met-Asp-Lys-Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-
Ile-Ile-Trp,
Cys-Ser-Cys-Ser-Ser-Trp-Leu-Asp-Lys-Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-
Ile-Ile-Trp,

Cys-Val-Tyr-Phe-Cys-His-Leu-Asp-Ile-Ile-Trp,
N-Acetyl-Leu-Met-Asp-Lys-Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp,
His-Leu-Asp-Ile-Ile-Trp,
(DTrp)-Leu-Asp-Ile-Ile-Trp,
Cyclo-(DTrp-DAsp-Pro-DVal-Leu),
Cyclo-(DGlu-Ala-alloDIle-Leu-DTrp),
Cyclo(D-Trp-D-Asp-Pro-α-(2-thienyl)-D-Gly-Leu),
H-Gly-Asn-Trp-His-Gly-Thr-Ala-Pro-Asp-Trp-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-
Ile-Trp-OH,

Cys-Thr-Cys-Asn-Asp-Met-Tyr-Ala-Glu-Glu-Cys-Leu-Asn-

Phe-Cys-His-Glu-Asp-Val-Ile-Trp,
Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp,
Ac-Leu-Met-Asp-Lys-Glu-Ala-Val-Tyr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp,
Suc-Asp-Glu-Glu-Ala-Val-Thr-Phe-Ala-His-Leu-Asp-Ile-Ile-Trp,

Cys-Val-Tyr-Phe-Cys-His-Asp-Leu-Ile-Ile-Trp,

Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-

Phe-Cys-His-Leu-Asp-Ile-Ile-Trp,

Cys-Ser-Cys-Ser-Ser-Leu-Met-Asp-Lys-Glu-Cys-Val-Tyr-

Phe-Cys-His-Leu-Thr-γ-methyl-Leu-Ile-Trp,

Leu-Asp-Ile-Ile-Trp,

Ac-His-Leu-Asp-Ile-Ile-Trp,

Ac-D-His-Leu-Asp-Ile-Ile-Trp,

Ile-Ile-Trp,

Asp-Gly-Gly-Cys-Gly-Cys-(D-Trp)-Leu-Asp-Ile-Ile-Trp,

Ac-D-Bhg-Leu-Asp-Ile-Ile-Trp, in which Bhg stands for a 10,11-dihydro-5 H-dibenzo-[a,d]-cycloheptenylglycine radical,

Ac-D-Bip-Leu-Asp-Ile-Ile-Trp, in which Bip stands for a 4,4'-biphenylalanine radical or the structure

Asp-Gly-Gly-Cys-Gly-Cys-Phe-(D-Trp)-Leu-Asp-Ile-Ile-Trp or is

a 4-t-butyl-N-[6-(2-hydroxy-ethoxy)-5-(3-methoxy-phenoxy)-4-pyrimidinyl-benzenesulfonamide radical,

a 4-t-butyl-N-[6-(1',2'-dihydroxy-propyloxy)-5'-(2-methoxy-phenoxy)-2-methoxy-4-pyrimidinyl-benzenesulfonamide radical,

a 4-t-butyl-N-[6'-(2'-hydroxy-ethoxy)-5-(2-methoxy-phenoxy)-2,2'-bipyrimidin-4-yl-benzenylsulfonamide radical,

a 27-O-caffeoylmyricerone radical, or

a 2(R)-[2-(R)-[2(S)-[[1-(hexahydro-1H-azepinyl)]-carbonyl]amino-4-methylpentanoyl]amino-3-[1-methyl-1H-indonyl)]propinonyl]amino-3-(2-pyridyl)propionic acid radical.

11. Compound according to claim 9 or 10, in which the active group contains a radionuclide of the elements At, Ba, Br, C, F, N, O or P.

12. Compound according to claim 9 or 10, in which the active group is vinblastine, doxorubicin, bleomycin, methotrexate, 5-fluorouracil, 6-thioguanine, cytarabine, cyclophosphamide or a cis-platinum radical.

13. Compound according to claim 9 or 10, in which the active group is derived from a quercetin, genistein, erbstatin, lavendustin A, herbimycin A, aeroplysinin-1-tyrphostin-, S-aryl-benylidene malononitrile or benzylidene malononitrile radical.

14. Compound according to claim 9 or 10, in which the active group is derived from a mercaptopurine, N-methyl-formamide, 2-amino-1,3,4-thiadiazole, melphalan, hexamethylmelanine, dichloromethotrexate, mitoguazone, sumarin, bromodeoxyuridine, iododeoxyuridine, semustine, 1-(2-chloroethyl)-3-(2,6-dioxo-3-piperidyl)-1-nitrosourea, N,N'-hexamethylene-bis-acetamide, azacytidine, dibromodulcitol, erwinia-asparaginase, ifosfamide, 2-mercaptoethanesulfonate, teniposide, taxol, 3-deazauridine, folic acid antagonist, homoharringtonine, cyclocytidine, acivicin, ICRF-187, spiromustine, levamisole, chlorozotocin, aziridinylbenzoquinone, spirogermanium, aclarubicin, pentostatin, PALA, carboplatinum, amsacrine, caracemide, iproplatin, misonidazole, dihydro-5-

azacytidine, 4'-deoxy-doxorubicin, menogaril, triciribine phosphate, fazarabine, tiazofurin, teroxirone, ethiofos, N-(2-hydroxyethyl)-2-nitro-1H-imidazole-1-acetamide, mitoxantrone, acodazole, amonafide, fludarabine phosphate, pibenzimol, didemnin B, merbarone, dihydrolene perone, flavone-8-acetic acid, oxantrazole, ipomeanol, trimetrexate, deoxyspergualin, echinomycin or a dideoxycytidine radical.

15. Compound according to claim 9 or 10, in which the active group is derived from an anti-PDGF or a triazolopyrimidine.

16. Compound according to claim 9 or 10, in which the active group is derived from an RGD-peptide, which binds to GP IIb/IIIa receptors, from an acetylsalicylic acid, dipyridamole or thrombin radical.

17. Compound according to claim 9 or 10, in which the active group is derived from heparin, hirudin, low molecular weight heparin or marcumar.

18. Compound according to claim 9 or 10, in which the active group is derived from factor VIIa or Xa inhibitors.

19. Compound according to claim 9 or 10, in which the active group is derived from a corticoid or a nonsteroidal anti-inflammatory agent.

20. Compound according to claim 9 or 10, in which the active group is derived from colchicine, angiopeptin, estradiol or an ACE inhibitor.

21. Compound according to claim 9 or 10, in which the active group is derived from verapamil, nifedipine or diltiazem.

22. Compound according to claim 9 or 10, in which the active group is derived from simvastatin or probucol.

23. Compound according to claim 9 or 10, in which the active group is derived from an aptamer or antisense oligonucleotide.

24. Therapeutic agents that contain a compound according to one of claims 9 to 23, dissolved, emulsified or suspended in an aqueous medium and the adjuvants, additives and/or stabilizers that are commonly used in galenicals.